

Taxonomy of the Peregrine *Falco peregrinus* / Barbary Falcon *F. (peregrinus) pelegrinoides* complex in Morocco

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La taxonomie, l'identification et la répartition respective des différentes sous-espèces du complexe Faucon pèlerin/Faucon de Barbarie demeurent problématiques et incomplètement connues. Le Faucon de Barbarie *Falco pelegrinoides* est considéré soit comme une espèce à part entière, soit comme une sous-espèce du Faucon pèlerin *Falco peregrinus*. Forsman⁹, qui le traite comme sous-espèce, se base pour cela entre autres sur des oiseaux marocains qu'il estime être des intermédiaires. Ceux-ci, parfois appelés 'atlantis' et connus du sud-ouest du Maroc, apparaissent toutefois former une population intermédiaire stable entre les sous-espèces *minor* et *brookei*. On observe une évolution clinale, les oiseaux côtiers étant plus proches de *brookei*, tandis que les oiseaux de l'est de la vallée du Souss (Aoulouz) sont plus proches de *minor*. Pour ces raisons, et en plus des différences morphologiques et de sa cohabitation avec *minor* et *brookei*, *pelegrinoides* semble bien être une espèce à part entière. Afin de mieux comprendre sa répartition géographique et ses éventuels mouvements migratoires au Maroc, il est demandé aux observateurs de porter une attention particulière à ces oiseaux. Notons que toutes les observations de Faucon de Barbarie devraient être soumises à la Commission d'Homologation des oiseaux rares du Maroc.

Introduction

Despite the availability of excellent descriptions of all Western Palearctic falcons, the Peregrine *Falco peregrinus* complex remains problematic, in respect of the identification, taxonomic position and respective ranges of its subspecies. This is especially true in Morocco, where at least four subspecies of Peregrine occur, in addition to Barbary Falcon *Falco (peregrinus) pelegrinoides*. This paper attempts to summarise current knowledge of the taxonomy and range of Moroccan populations. It should be borne in mind that there is still much to learn about these forms in Morocco.

Moroccan populations

Most Peregrines seen in Morocco are *brookei*¹³, which is known from the Mediterranean^{6-8,13} and Atlantic coasts^{2,14-16} south to at least Essaouira (pers obs), and has also been recorded inland¹⁴⁻¹⁶, notably in the High Atlas Mountains, where it is not uncommon (pers obs). In winter, it is also recorded further south, e.g. in the Souss Valley. The other breeding population is the localised and apparently rare *minor*^{4,8,13,16}, which is restricted to desert and arid areas south of the High Atlas (pers obs), but is widespread in sub-Saharan Africa^{6,12}. In winter, both Eurasian *calidus* and *peregrinus* have been recorded (pers. obs.), but neither form breeds in Morocco.

Barbary Falcon *Falco (peregrinus) pelegrinoides* is relatively widespread, being known from the High



Atlas, Anti Atlas, Souss Valley, desert areas in the south-east and along the coast from (at least) Oualidia (pers obs) in the north to the extreme south, probably as far as the Mauritanian border^{3-6,10,14-16}. It could be even more widespread, but north-east Morocco is under-surveyed by ornithologists and its status there is unclear, although unconfirmed sightings have been reported from this area¹⁴.

Another population, sometimes called '*F. peregrinus atlantis*'¹³ or 'Atlantic Peregrine'³, is found mainly in the Souss Valley and along the coast near Tamri, Agadir and the mouth of Massa River, and has an uncertain taxonomic position which is discussed below.

Taxonomic problems

The principal problem is the relationship between Barbary Falcon and sympatric or parapatric forms of Peregrine. Although differences exist in structure and plumage between Barbary Falcon and Peregrine, the two are certainly very close to each other¹⁰. Species status for these two forms is principally based on their sympatry without apparent interbreeding⁹, notably in Morocco. This last point is discussed by Forsman⁹ who considers some strange-plumaged individuals photographed in Morocco to be possible hybrids between *brookei* and *pelegrinoides*.

Another problem is the position of the so-called '*atlantis*' form, about which almost nothing is known. It has occasionally been treated as a possible new subspecies¹³.

Discussion

Our knowledge of '*atlantis*' leads us to believe that it cannot be a hybrid, principally because, in the Souss Valley, pairs of '*atlantis*' breed together (pers obs) and no other form of Peregrine is known to occur during the breeding season within its range. Moreover, it occurs only in south-west Morocco, where it is not uncommon, but has not been reported elsewhere.

We do not consider them to be intermediate between *pelegrinoides* and *brookei* (*contra* Forsman⁹). Indeed, Forsman⁹ depicts two *brookei*-like '*atlantis*', which are typically seen along the coast (pers obs), that he considers to be 'Peregrine/Barbary Falcons' and intermediate between the two. In our opinion this population is obviously close to *brookei*, especially in coastal areas, and that elsewhere they are closer to *minor* than to *pelegrinoides*, with those of the eastern Souss Valley even more similar to *minor*. We are, therefore, convinced that they form a stable intermediate population between *brookei* and *minor*, intergrading with the former along the coast (south of Essaouira) and with *minor* east and south-east of the Souss Valley.

Size of coastal '*atlantis*' is very close to *brookei* (and *pelegrinoides*), but appears smaller in the east. Structure is very close to *minor* and *brookei*, but not to *pelegrinoides*, which has different proportions: tail (relative to wings) longer and marginally wider, body shorter, more prominent head, wings narrower (appearing longer) and less heavy jizz. Their flight

actions are also different. Notably when pursuing prey, Barbary has parrot-like wingbeats, unlike '*atlantis*', *brookei* or *minor*. Underparts in coastal '*atlantis*' are barred like *brookei*, but in the east they are less marked and (more) tinged rufous, like *minor*. They are, however, never spotted like some *pelegrinoides*. The head pattern is very similar to *minor*, with rufous-tinged cheeks, occasionally some rufous on the nape (as in some *brookei*), moustachials narrower than in most *brookei*, but similar to most (but not all) *minor* and broader than in *pelegrinoides* (pers obs). Tail pattern is like *brookei* and *minor*. Underwing pattern is regularly barred like *brookei* and *minor*, with no darker area on the wingtips and trailing edges like *pelegrinoides*. Upperparts coloration is darker than in *pelegrinoides*, relatively dark in coastal birds and very dark in eastern birds, which approach *minor* in this aspect. Note that all these differences relate to adults.

Interestingly, '*atlantis*' breeds in the same area as both Barbary and Lanner Falcons *Falco biarmicus erlangeri*, eg in Aoulouz where the three taxa breed in the same gorge (pers obs).

Conclusion

Barbary Falcon is sympatric with both *brookei* and *minor* without interbreeding. It is also widely sympatric with an unusual form of Peregrine, '*atlantis*', which appears to be intermediate between *minor* and *brookei* (with which '*atlantis*' is allopatric), and is often reported in south-west Morocco. Therefore, and due to clear, well-known differences in the structure and plumage of Barbary Falcon compared to Peregrine, Barbary Falcon is best treated as a species.

However, at least in Morocco, the respective range of all populations of Peregrine are still imperfectly known, as are their seasonal movements. Moreover, the range of Barbary Falcon *Falco pelegrinoides* is also poorly understood, especially in the north of the country. Some movements are suspected but have not been proven. Therefore, all records of these taxa are welcome, and a description of all Barbary Falcons seen in the country should be submitted to the Moroccan Rare Birds Committee (c/o Dr. Jacques Franchimont, Quartier Abbas Lmsahdi, Rue n°6, n°22, VN 50.000 Meknes, Morocco). ☞

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Appendix 1. Moroccan records of Barbary Falcon *Falco (peregrinus) pelegrinoides*

Records accepted by MRBC

Taroudannt & Souss Valley: three
 Aoulouz: one
 Jorf/Erfoud: two
 Merzouga: one
 Boumalne-du-Dadès/El Keela M'Gouna: four
 Mahmid: one
 Tamri: one
 Agadir/Massa: three

Recent records awaiting decision by MRBC

Oualidia: one
 Tizi'n Tichka: one
 Tamri: one
 Goulimine/Tan-Tan: three



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